

# Benchmarking and standardizing of dietetic practices in hemodialysis (HD) patients in Lebanon: clinical and quality of life outcomes

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## **CHAPTER 9**

### **Study Summary**



## STUDY SUMMARY

The aim of the study was to assess the effect of implementing Self Management Dietary Counseling (SMDC) on improved adherence of HD patients and achieving chronic kidney disease related mineral bone disorder (CKD-MBD) management.

This was done through an integrated two-prong research study:

1. Patient-directed track: Effect of optimal nutritional awareness in HD patients through specialized dietetic education programs conducted by trained professionals, on improving adherence to therapy and thus clinical, quality of life and cost outcomes.
2. Health care staff-directed track: Effect of training key health care professionals (especially dietitians) in hospitals on management of CKD-MBD.

### Sample selection:

Through a randomization process, 12 HD units were selected from the national sample and randomly assigned into 2 clusters. Patients in cluster A were randomly assigned according to their dialysis shift to Dedicated Dietitian (DD) protocol (n = 133) and Existing Practice (EP) protocol (n = 138). Cluster B patients (n = 299) received Trained Hospital Dietitian (THD) protocol. Inclusion criteria for patients were: stable (free of acute diseases) HD patients  $\geq 18$  years, able to comprehend the study and sign a consent form were included to the study.

### Staff Training:

Eleven dietitians were trained by the principle investigator (PI) on KDOQI nutrition standards for HD patients. The PI met with the dietitians on a weekly basis for 2 hours over 8 weeks. Five of these dietitians were externally recruited research dietitians and 6 of them were hospital dietitians responsible for managing HD patients.

### Patient Education Material Development:

Focus group discussions were conducted with HD patients and renal dietitians from Lebanon to explore the barriers and facilitators to dietary adherence in the renal diet. According to the results of these discussions and using the Trans Theoretical Model (TTM), the patient education material was developed. The main aim was to increase knowledge and self management skills of patients on phosphorus (P) restricted diet, and emphasize the importance of balancing low P with adequate protein intake to prevent malnutrition.

## Conduct of study and data collection.

### Study Protocols:

- Dedicated Dietitian Protocol: Each patient in this group received an individualized twice per week 15 minutes education, by the trained research dietitian, for 6 months, a total of 12 hours of education per patient. The patient educational material designed in this study were used only for these patients.
- Existing Practice Protocol: Considered as control, where patients received education from hospital dietitians, who was blinded the study.
- Trained Hospital Dietitian Protocol: Patients were educated by the trained hospital dietitian. The dietitian was not given educational material or any protocol to follow for patient care.

### Study phases:

The study had 3 consecutive phases: baseline (t0), intervention (t1), follow-up (t2), where each had a duration of 6 retrospective months. During the follow up period the research team had no contact with any of the participants.

### Data collection:

From the medical chart the following were collected: demographics, weight, length of hospital stay (LOS) in days, blood urea nitrogen (BUN) (mg/dL) and serum P (mg/dL). Moreover, 4 questionnaires were used in this study: 1) Knowledge questionnaire (KnQ); score of less than 60 % indicated insufficient knowledge; 2) Malnutrition Inflammation Score (MIS), the score ranged from 0 (normal) to 30 (severely undernourished); 3) Stages of Behavioral Change (TTM stage) for P restricted diet, the score was from 1 to 5 indicating the stages of behavioral change and health related Quality of life (HRQOL). Moreover through a 24 hour recall, daily dietary protein consumption as compared to needs and dietary P density were calculated.

### Results:

Results showed that the DD protocol was superior over the other 2 protocols , as it improved significantly most study parameters as summarized in figure 1.

	DD	EP	THD
<b>Serum P</b>	✓	⊖	⊖
<b>TTM stage</b>	✓	⊖	X
<b>Knowledge</b>	✓	✓	✓
<b>LOS</b>	✓	✓	✓
<b>P/Protein ratio</b>	⊖	⊖	X
<b>BUN</b>	⊖	⊖	⊖
<b>Weight</b>	⊖	⊖	⊖
<b>MIS</b>	⊖	⊖	⊖
<b>HRQOL</b>	✓	X	X
<b>%Protein Intake</b>	X	X	X

Figure 1: Effect of each study protocol on all study parameters

(✓ indicates significant improvement; X indicates significant deterioration and ⊖ indicates absence of change).

The objective of the this trial was to determine the role of a trained and dedicated dietitian in the HD unit on patient clinical outcomes in Lebanon.

The study can serve as a developing country model. The findings show that there is room for improvement among Lebanese HD patients regarding osteodystrophy management and relevant biochemical and clinical parameters, justifying an effort to improve nutritional advice.

In conclusion, dietetic services in HD units in Lebanon are lagging behind although professionals involved do their very best. Hospitals that operate a HD unit do not seem to equip their dietitians with sufficient time, training, or empowerment to follow KDOQI standards of care in the management of HD patients. The supply of dietetic services and demand of renal patients is not in balance; due to the lack of specialized renal dietitians in the face of the ever-rising numbers of renal failure and HD patients in Lebanon. The MOPH is encouraged to promote the integration of renal dietitians as a core member of the health care team for the optimal cost effective management of HD patients in Lebanon. This can be done by: the following steps: 1) hospitals provide specialized training to hospital dietitians on KDOQI standards, 2) reinforce their implementation, 3) continuously audit and assess compliance to KDOQI nutrition guidelines in routine practice, 4) allocate extra time for management of HD patients either by decreasing responsibilities of already existing dietitians or recruiting new ones to be fully dedicated to the HD unit and finally 5) consider renal dietitians as key health care professionals in the management of HD patients.

